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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/977,435	10/15/2001	Kenshin Kitoh	791_024 CON	3248
25191	7590	03/31/2004	EXAMINER	
BURR & BROWN PO BOX 7068 SYRACUSE, NY 13261-7068			CREPEAU, JONATHAN	
			ART UNIT	PAPER NUMBER
			1746	
DATE MAILED: 03/31/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 09/977,435	Applicant(s) KITOH ET AL.	
	Examiner Jonathan S. Crepeau	Art Unit 1746	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 07 October 2003.
- 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 7-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 7-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☒ Certified copies of the priority documents have been received in Application No. 09/169,563.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date: _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>10-15-01</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Teramoto (U.S. Patent 5,571,632) in view of JP 9-312161.

Teramoto is directed to a lithium secondary battery (see abstract). The battery comprises a case made of two pipes (11, 12), and an internal electrode body (13) disposed therebetween (see Fig. 5). The battery further comprises first and second disks (15) for sealing the open ends of the battery. The outer pipe (12) is comprised of aluminum and has an outer diameter of 50 mm and a thickness of 0.3 mm (see col. 7, lines 5-8). Thus, the ratio of the thickness to the diameter is 0.006, which falls within the range recited in claim 1.

However, Teramoto does not expressly teach that the battery case is made *solely* of a single pipe, or that the entire inner volume defined by the single pipe is airtightly sealed with the disks, as recited in claim 1.

JP '161 is directed to a battery comprising a single outer pipe casing (10), an internal electrode element (6), and disks (11, 12) which seal the entirety of the volume defined by the pipe (see Fig. 1).

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Therefore, the invention as a whole would have been obvious to one of ordinary skill in the art at the time the invention was made because the artisan would be motivated to use the configuration disclosed by JP '161, i.e., two disks that seal the entirety of the volume defined by the outer pipe, in the battery of Teramoto. In paragraph 9 of the machine translation, the JP '161 reference teaches that "the technical problem of this invention is raising the energy density per unit weight of an electrochemistry component." The artisan would be able to see that this can be realized by using the entirety of the inner volume of the battery for the electrochemically active elements. Accordingly, the artisan would be motivated to modify the battery of Teramoto so as to use the entire inner volume thereof for the active battery elements (i.e., the inner pipe would be replaced with electrochemically active elements). As such, the disks would airtightly seal both ends of the battery case which is defined by the open ends of the outer pipe. Accordingly, the subject matter of claim 1 would be rendered obvious to a skilled artisan.

It is noted that the effective date of the JP '161 reference is December 2, 1997. This reference may be removed as prior art upon the filing of a priority document translation.

3. Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Teramoto in view of JP 9-312161 as applied to claim 7 above, and further in view of McFadden (U.S. Patent 5,772,934).

Neither Teramoto nor JP '161 expressly teach that the positive active material comprises  $\text{LiMn}_2\text{O}_4$  and acetylene black, as recited in claims 8 and 9.

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McFadden teaches a positive electrode for a battery that comprises these materials in column 4, lines 1-8.

Therefore, the invention as a whole would have been obvious to one of ordinary skill in the art at the time the invention was made because the artisan would be motivated to use these materials in the positive electrode of Teramoto. In the cited passage, McFadden teaches that each of these materials is "preferred" for use in a positive electrode. Accordingly, the artisan would be motivated to use these materials in the positive electrode of Teramoto.

### *Conclusion*

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jonathan Crepeau whose telephone number is (571) 272-1299. The examiner can normally be reached Monday-Friday from 9:30 AM - 6:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski, can be reached at (571) 272-1302. The phone number for the organization where this application or proceeding is assigned is (571) 272-1700. Documents may be faxed to the central fax server at (703) 872-9306.

  
Jonathan Crepeau  
Patent Examiner  
Art Unit 1746  
March 26, 2004